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Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.10/KRIDL/WMM/Gradation/2014-15

06.05.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to roads and drains at Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.

Reference : EE/BTP/KRIDL/W.O/472/2013-14 Dated: 21.02.2014

Date of Testing : 06.05.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7850**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	150	150	1.9	98.1	95-100
22.4	2595	2745	35.0	65.0	60-80
11.2	1465	4210	53.6	46.4	40-60
4.75	1285	5495	70.0	30.0	25-40
2.36	945	6440	82.0	18.0	15-30
0.600	660	7100	90.4	9.6	8-22
0.075	600	7700	98.1	1.9	0-8

Note:

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Job No: CTCE/BBMP/W.No.10/KRIDL/WMM/AIV/2014-15

06.05.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	***Asst. Executive Engineer,*** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of the Work	Improvements to roads and drains at Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
Reference	EE/BTP/KRIDL/W.O/472/2013-14 Dated: 21.02.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	06.05.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	387	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	299	
4	Aggregate Impact value = percent fines	21.96	22.34	
	100* (W_2/W_1)%			22.15

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.10/KRIDL/WMM/S-T/2014-15 06.05.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Technical Manager,** KRIDL, Bangalore.
Name of Work	Improvements to roads and drains at Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
Reference	EE/BTP/KRIDL/W.O/472/2013-14 Dated: 21.02.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	06.05.2014

Result : Flakiness Index = **11.06%**

Elongation Index = **13.23%**

Result : Combined Flakiness & Elongation index 24.29%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.10/KRIDL/QB/2014-15 19.05.2014

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

CLIENT	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, *BBMP*, Bangalore.
AGENCY	:	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to roads and drains at Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
REFERENCE	:	EE/BTP/KRIDL/W.O/472/2013-14 Dated: 21.02.2014
SOURCE OF LOCATION	:	Hot mix Plant, Bangalore
DATE OF TESTING	:	19.05.2014

The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	82	80 to 100
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	43	Min. 40
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 75
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	298	Min. 220

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Job No.: CTCE/BBMP/W.No.10/KRIDL/SDBC/Bit/2014-15 22.05.2014

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
REFERENCE	EE/BTP/KRIDL/W.O/472/2013-14 Dated: 21.02.2014
SAMPLE I/D	Roads in Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
DATE OF TESTING	22.05.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475.5	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	24.5	25.50
7. Bitumen content in %	4.90	5.10
8. Average	**5.00**	

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BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
REFERENCE	EE/BTP/KRIDL/W.O/472/2013-14 Dated: 21.02.2014
SAMPLE I/D	Roads in Venkatagiriyappa Layout in Ward No.10, BBMP, Bangalore.
DATE OF TESTING	22.05.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.31	5.32	5.32	94.68	90-100
4.75	256.3	53.90	59.22	40.78	35-51
2.36	56.32	11.84	71.07	28.93	24-39
1.18	36.25	7.62	78.69	21.31	15-30
0.3	33.21	6.98	85.68	14.32	9-19
0.075	41.22	8.67	94.34	5.66	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.35	5.34	5.34	94.66	90-100
4.75	265.3	55.91	61.25	38.75	35-51
2.36	44.23	9.32	70.58	29.42	24-39
1.18	43.32	9.13	79.70	20.30	15-30
0.3	34.26	7.22	86.93	13.07	9-19
0.075	32.36	6.82	93.74	6.26	3-8

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